



CITY OF DURHAM | NORTH CAROLINA

Date: December 20, 2011
To: Thomas J. Bonfield, City Manager
Through: Theodore L. Voorhees, Deputy City Manager
From: Donald F. Greeley, Director, Water Management
Jerry Morrone, Engineering Supervisor, Water Management

Subject: Water Treatment Plant Residuals Master Plan and Design Contract

Executive Summary

The Department issued a Request for Qualifications (RFQ) for Professional Engineering Services for the master planning, design, permitting and construction administration of upgrades to the residuals handling processes at the Williams and Brown Water Treatment Plants. The Department received 6 responses to the RFQ. The engineering firm of Camp, Dresser & McKee, Inc. (CDM) was selected and a scope of services for master planning and the preliminary engineering portion of the project has been negotiated in the amount of \$496,100.00.

As part of the master planning and preliminary engineering phase, a Residuals Management Plan and Preliminary Engineering Report/Conceptual Design will be prepared with recommendations on the selection and sizing of residuals handling facilities. This recommendation will then be used to prepare a design, permitting and construction administration amendment to this contract with CDM.

Recommendation

The Department of Water Management recommends that the City Council:

1. Authorize the City Manager to execute a contract with Camp Dresser & McKee, Inc. for Professional Engineering Services in an amount not to exceed \$496,100.00 for the Water Treatment Plant Residuals Master Plan and Design Contract and
2. Establish a contingency fund for the contract in the amount not to exceed \$50,000.00; and
3. Authorize the City Manager to negotiate change orders for the contract provided that the cost of all change orders does not exceed \$50,000.00, and the total project cost of \$546,100.00.

Background

The City currently provides potable water to its customers through the Brown and Williams Water Treatment Plants. As part of the routine treatment of raw water in to potable water, solids are settled and filtered out of the raw water. These solids are referred to as residuals, and must be disposed of in accordance with the applicable state and federal regulations.

Currently, the residuals are removed and disposed of at the landfill by an outside contractor. The NC Public Water Supply Section (NCPWS) has indicated to the City the current methods of residuals handling during the treatment process must be upgraded to meet current standards.

The proposed project will evaluate the current handling and disposal of the residuals, and evaluate and recommend alternate methods of disposal. The proposed project will also recommend upgrades to the handling of the residuals to reduce removal and disposal costs as well as enhance current water treatment plant operations. The proposed project will also make recommendations on the handling of the additional residuals generated when treatment capacity of the Brown Water Treatment Plant is increased.

This initial phase of the project consists of the master planning and the development of a preliminary engineering report. The project work includes the following engineering services:

- A. Regulatory Review and Coordination Meetings with the NC Department of Environment and Natural Resources (NC DENR)
- B. Preparation of Forecasts of Residuals Production Quantities
- C. Assessment of Existing Residuals Facilities and Management Practices
- D. Identification of Alternative Residuals Management Strategies
- E. Preparation of a Residuals Management Plan
- F. Preparation of a Preliminary Engineering Report

Issues and Analysis

There were 6 firms that responded to the RFP:

- ARCADIS G&M of North Carolina, Inc.
- Black & Veatch International Company
- Camp Dresser & McKee, Inc. (CDM)
- Environmental Engineering and Technology, Inc
- Hazen and Sawyer
- HDR Engineering, Inc of the Carolinas

Three firms were short listed to present their proposals to the selection committee. The selection committee was comprised of staff from the department and the Equal Opportunity/Equity Assurance Department. Based on their proposal and experience the committee selected the firm of CDM for the project.

Once CDM has completed its analysis and made recommendations for the upgrade and disposal of the residuals, the City will negotiate an amendment to the proposed contract to prepare detailed design plans, prepare the necessary permits and provide construction oversight. This amendment is anticipated to be between \$3,000,000 and \$5,000,000, depending on the recommended residuals handling facilities. Construction costs are anticipated to be in the range of \$25,000,000-\$30,000,000.

Alternatives

One alternate is to not pursue the project and continue to dispose of the residuals by methods currently available. This would not bring the residuals program up to the current standards outlined by NCPWS. In addition, it is likely that significant cost savings will be realized by evaluating and upgrading the residuals handling facilities at both water treatment plants. As water treatment capacity increases at Brown Water Treatment Plant, additional residuals will be generated and the handling of these residuals would likely have to be handled at an increased cost due to logistical issues.

A second alternate is to conduct the residuals management master plan in-house with current engineering and operations staff. Current staff lacks the availability and expertise to complete the evaluation and engineering report in a timely manner, and does not have the capability to prepare the detailed design drawings necessary to bid a project of this magnitude.

Financial Impact

The immediate cost to the City for the contract with CDM is \$496,100.00. The funds are currently available in the Residuals Handling Capital Project, 4100P762-732203-P0B10 and in the contingency fund 4100P762-731900-P0B10.

SDBE Summary

The Equal Opportunity/Equity Assurance Department reviewed the proposal submitted by Camp Dresser & McKee, Inc. (CDM) of Raleigh, North Carolina to determine compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting. The goals for this project are MSDBE 0% and WSDBE 1%. It was determined that CDM is in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.

SDBE REQUIREMENTS

CDM will subcontract to the following certified firms:

Firm	ID	City/State	Amount	% of Contract
A-1 Consulting Group, Inc.	SDBE*	Morrisville, NC	\$ 1,800.00	0.4%
CH Engineering, PLLC	WSDBE	Raleigh, NC	\$ 10,000.00	2.0%
Mid-Atlantic Drilling, Inc.	WSDBE	Carolina Beach, NC	\$ 9,500.00	1.9%

The MSDBE and WSDBE goals were exceeded.

*A-1 Consulting Group, Inc. is an Asian American SDBE and was used for minority participation for this project in compliance with the Ordinance to Promote Equal Business Opportunities in City Contracting.

WORKFORCE STATISTICS

Workforce statistics for CDM are as follows:

Total Workforce	3991	
Total Females	1281	(32%)
Total Males	2710	(68%)
Black Males	69	(2%)
White Males	1989	(50%)
Other Males	652	(16%)
Black Females	75	(2%)
White Females	973	(24%)
Other Females	233	(6%)